

Amendments to Claims:

5 This listing of claims replaces prior versions and listings of claims in the application:

Listing of Claims:

10 Please amend the claims of the present application as set forth below. A detailed listing of all claims is provided. A status identifier is provided for each claim in a parenthetical expression following each claim number. Changes to the claims are shown by strikethrough (for deleted matter) or underline (for added matter).

Claims 1-15 were originally filed.

Claims 1-5, 7-11, 13-15 are currently amended.

15 Accordingly, claims 1- 15 are pending.

Claim 1 (Currently amended): A 2D data collection sensor comprising:

an image sensor; and

an illumination module coupled to the image sensor, the illumination module
20 comprising a plurality of ~~an array of one or more~~ reflectors that reflect lights of a light source and collectively generate a uniform illumination pattern both for illuminating a target data area and providing visual aiming assistance, wherein there is a distinct light source element per reflector.

25 **Claim 2 (Currently amended):** The apparatus in claim 1, wherein each reflector comprises an opaque reflective surface with an aperture formed by the reflective surface,

the light source emits light onto the reflective surface and through the aperture onto the target data area, wherein a curvature and shape of the reflective surface ~~determine a shape of the illumination pattern surface~~ is curved for optimal uniformity and sharp edges of the illumination pattern; wherein each illumination pattern generated by each reflector
5 matches all other illumination pattern generated by all other reflectors and collectively generate a uniform illumination pattern.

Claim 3 (Currently amended): The apparatus in claim 2, ~~wherein the shape of the reflecting surface is curved for optimal uniformity and sharp edges of the illumination~~
10 ~~pattern; wherein the uniform illumination pattern matches the field of view of the image sensor.~~

Claim 4 (Currently amended): The apparatus in claim 1, wherein each reflector comprises a transparent solid with a reflective internal surface, light from the light source
15 enters the solid, is reflected by the reflective surface and exits through the solid onto the target data area, wherein a curvature and a shape of the reflective surface ~~produces a shape of the illumination pattern~~ is curved for optimal uniformity and sharp edges of the illumination pattern; wherein each illumination pattern generated by each reflector
matches all other illumination pattern generated by all other reflectors and collectively
20 generate a uniform illumination pattern.

Claim 5 (Currently amended): The apparatus in claim 4, ~~wherein the shape of the reflecting surface is curved for optimal uniformity and sharp edges of the illumination~~

~~pattern; wherein the uniform illumination pattern matches the field of view of the image sensor.~~

Claim 6 (Original): The apparatus in claim 2, wherein the light source comprises an
5 LED.

Claim 7 (Currently amended): A 2D imaging barcode reader comprising:

an image sensor; and

an illumination module coupled to the image sensor, the illumination module
10 comprising a plurality of ~~an array of one or more~~ reflectors that reflect light of a light
source and collectively generate a uniform illumination pattern both for illuminating a
target data area and providing visual aiming assistance for a target barcode, wherein there
is a distinct light source element per reflector.

15 **Claim 8 (Currently amended):** The apparatus in claim 7, wherein each reflector
comprises an opaque reflective surface with an aperture formed by the reflective surface,
the light source emits light onto the reflective surface and through the aperture onto the
target data area, wherein a curvature and shape of the reflective surface ~~determine a shape~~
~~of the illumination pattern surface~~ is curved for optimal uniformity and sharp edges of the
20 illumination pattern; wherein each illumination pattern generated by each reflector
matches all other illumination pattern generated by all other reflectors and collectively
generate a uniform illumination pattern.

Claim 9 (Currently amended): The apparatus in claim 8, ~~wherein the shape of the~~
25 ~~reflecting surface is curved for optimal uniformity and sharp edges of the illumination~~

pattern; wherein the uniform illumination pattern matches the field of view of the image sensor.

Claim 10 (Currently amended): The apparatus in claim 7, wherein each reflector

5 comprises a transparent solid with a reflective internal surface, light from the light source enters the solid, is reflected by the reflective surface and exits through the solid onto the target data area, wherein a curvature and a shape of the reflective surface ~~produces a~~
~~shape of the illumination pattern~~ is curved for optimal uniformity and sharp edges of the
illumination pattern; wherein each illumination pattern generated by each reflector
10 matches all other illumination pattern generated by all other reflectors and collectively
generate a uniform illumination pattern.

Claim 11 (Currently amended): The apparatus in claim 10, ~~wherein the shape of the~~
~~reflecting surface is curved for optimal uniformity and sharp edges of the illumination~~

15 ~~pattern; wherein the uniform illumination pattern matches the field of view of the image~~
sensor.

Claim 12 (Original): The apparatus in claim 8, wherein the light source comprises an LED.

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Claim 13 (Currently amended): A 2D data collection illumination pattern for a data collection image sensor, the illumination pattern comprising a shape and uniformity generated by ~~an array~~ a plurality of reflectors coupled to the data collection image sensor, wherein the reflectors reflect light from a light source, wherein there is a distinct light
25 source element per reflector; wherein each illumination pattern generated by each

reflector matches all other illumination pattern generated by all other reflectors and collectively generate a uniform illumination pattern.

Claim 14 (Currently amended): A method for 2D data collection comprising:

5 projecting an illumination pattern on a target image area, the illumination pattern comprising a shape and uniformity generated by a plurality ~~an array~~ of reflectors coupled to a data collection image sensor, wherein the reflectors reflect light from a light source, and wherein the illumination pattern provides both image illumination and visual aiming assistance, wherein there is a distinct light source element per reflector; wherein each
10 illumination pattern generated by each reflector matches all other illumination pattern generated by all other reflectors and collectively generate a uniform illumination pattern;
and

reading data from the target image area via an image sensor.

15 **Claim 15 (Currently amended):** A method for 2D barcode data collection comprising:

projecting an illumination pattern on a target image area, the illumination pattern comprising a shape and uniformity generated by a plurality ~~an array~~ of reflectors coupled to a data collection image sensor, wherein the reflectors reflect light from a light source, and wherein the illumination pattern provides both image illumination and visual aiming
20 assistance, wherein there is a distinct light source element per reflector; wherein each
illumination pattern generated by each reflector matches all other illumination pattern generated by all other reflectors and collectively generate a uniform illumination pattern;
and

reading data from the target image area via an image sensor.

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